REMARKS

Claims 1 and 3-10 are all the claims pending in the application. By this Amendment, Applicant editorially amends claims 1, 4-7, 9, and 10. The amendments to claims 1, 4-7, 9, and 10 were made for reasons of precision of language and consistency, and do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents.

I.   Summary of the Office Action and Incomplete Office Action

The Examiner objected to the specification and the claims for minor informalities. The Examiner rejected claims 5 and 7 under 35 U.S.C. § 112, first paragraph and claims 1 and 3-10 under 35 U.S.C. § 102.

However, the Office Action is incomplete in that it fails to address the features of claim 6. That is, the Examiner indicated that claim 6 is rejected under 35 U.S.C. § 102. However, the features of claim 6 are <u>not addressed</u> in the detailed action (*see* page 6 of the Office Action discussing the rejection of claims 5 and 7). In every Office Action, each pending claim should be mentioned by number and its treatment or status given. MPEP 707.07(i). Applicant respectfully submits that the prior art of record does not disclose or suggest the unique features of claim 6. Accordingly, Applicant respectfully requests the Examiner to indicate that claim 6 contains allowable subject matter or set forth basis for rejecting claim 6.

II.   Objections to the Specification

The Examiner objected to the specification for a minor informality. Specifically, the Examiner alleges that the abbreviation "BSM" is not defined in the specification (*see* page 2 of the Office Action). Applicant respectfully disagrees. Applicant respectfully submits that the

specification recites "…the device shown in Figure 1 includes a server BSM providing one or more best server maps" (page 4, lines 27 to 28). That is, the BSM is defined as "best server maps." In short, the specification defines the abbreviation BSM. In view of the foregoing, Applicant respectfully requests the Examiner to withdraw this objection to the specification.

III.   Objections to the Claims

The Examiner objected to the claims for minor informalities. Applicant has revised the claims, and respectfully submits that the claims as now presented no longer include the potential informalities mentioned by the Examiner. Applicant therefore respectfully requests the Examiner to withdraw the objections to the claims.

IV.   Claim Rejections under 35 U.S.C. § 112

Claims 5 and 7 are rejected under 35 U.S.C. § 112, first paragraph. With respect to claim 5, Applicant respectfully thanks the Examiner for pointing out, with particularity, the aspects of the claim thought to be indefinite. Applicant respectfully requests the Examiner to withdraw this rejection in view of the self-explanatory claim amendment being made herein.

With respect to claim 7, Applicant does not acquiesce to the Examiner's reasons for the maintained rejection. However, to expedite the prosecution of the above-identified application and for improved clarify, Applicant amends claim 7 to replace the term "module" with "instruction". Specifically, the specification discloses that the planning tool P implements the exemplary method depicted in Figure 2 (*see* page 5, lines 1 to 6 of the specification). In particular, the first exemplary step implemented by the planning tool is dividing a cell into subcells (*see* page 5, lines 7 to 34 of the specification). This exemplary functionality are carried out by instructions in the planning tool. That is, the planning tool comprises various instructions

for implementing operations of the exemplary method in Fig. 2. Accordingly, the specification

supports the structure set forth in claim 7. In view of the foregoing, Applicant respectfully

requests the Examiner to withdraw this rejection of claim 7.

V.   Claim Rejections under 35 U.S.C. § 102

Claims 1 and 3-10 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S.

Patent No. 6,539,221 B1 to Vasudevan et al. (hereinafter "Vasudevan"). Applicant respectfully

traverses these grounds of rejection in view of the following comments.

In an exemplary non-limiting embodiment a cell is divided into areas using information

on the handover boundaries obtained from the cellular network. For example, the entering

handover boundary, obtained from the cellular network, is used to build the outgoing handover

boundaries. The outgoing handover boundaries of the cell (derived from the entering handover

boundaries of the neighboring cells) are used to divide the cell into areas. It will be appreciated

that the foregoing remarks relate to the invention in a general sense, the remarks are not

necessarily limitative of any claims and are intended only to help the Examiner better understand

the distinguishing aspects of the claims mentioned further below.

Vasudevan does not disclose all of the claim 1. For example, Vasudevan does not teach

the claimed method of constructing a representation of the geographical distribution of traffic for

a cellular radio network including dividing each cell of said cellular network into a set of areas

using information on handovers boundaries obtained from said cellular network, determining a

traffic value for each of said areas, and determining a representation of the geographical

distribution of the traffic from said traffic values, wherein the traffic value of an area depends on

an outgoing handover probability from said area to a neighboring cell. Neither Vasudevan's bins

nor Vasudevan's sectors can correspond to the recited "areas."

Bins

As an initial matter, Vasudevan's bins cannot correspond to the recited areas. In

Vasudevan's wireless network, the cells are divided into "bins" of a <u>fixed size</u>. For example,

these bins can be 100m x 100m (*See* Vasudevan at Fig. 3). The bins are then classified based on

several factors, including handovers boundaries (*See* Vasudevan at 3:11-29) and traffic (*See*

Vasudevan at 4:32-53).

However, Vasudevan's cells are not divided into bins "<u>using information on handovers</u>

<u>boundaries obtained from the cellular network</u>." Instead, <u>the cell is first divided into the fixed</u>

<u>bins</u>, and then the bins are merely classified based in-part on handover information. As such,

Vasudevan's "bins" cannot correspond to the recited "areas."

Sectors

Moreover, Vasudevan's sectors cannot correspond to the recited areas. Although

Vasudevan discloses that the cells of the cellular network can be divided into sectors, there is no

disclosure that Vasudevan's cells are divided into sectors "using information on handovers

boundaries obtained from said cellular network." *See*, for example, Vasudevan at Fig. 23a-c &

12:36-48.

Also, Vasudevan's reduced "sectors" (i.e., after cell-splitting) cannot correspond to the

recited "areas" at least because the geographical distribution of traffic for the cellular network is

not determined from traffic values for each of the reduced sectors.

As shown in, for example, Figs. 23a-c of Vasudevan, the size of a cell can be reduced by

reducing the transmitting power of a Base Transceiver Station ("BTS"). Vasudevan refers to this

reduction of an existing cell size "cell-splitting." In cell-splitting, the transmitted power of a cell

site is reduced in order to reduce the traffic of that cell site. *See* Vasudevan at 9:8-17. By

reducing the transmitted power, the cell size can be reduced until the cell traffic of the cell is below a maximum traffic threshold value. The amount of reduction of the cell transmission power, and therefore the cell size, needed to reduce the cell traffic below the threshold value are calculated based on traffic information that has been determined based on a precise bin-to-bin mobility estimation algorithm. *See* Vasudevan at 7:19-37.

Although the size of the cell can also be reduced on a sector basis (for example, in Fig. 23c the size of only one of the three cell sectors is reduced), the reduced "sectors" cannot correspond to the recited "areas" at least because the <u>determination of geographical distribution of traffic is not from the traffic values of the reduced sectors</u>. Instead, the distribution of traffic <u>has already been determined</u> based on the geographical distribution of traffic values of the bins. The reduced "sectors" are merely the <u>result</u> of a precise geographical distribution of the traffic values of the bins.

In sum, Vasudevan does not disclose or suggest construing areas based on their handover boundaries. In Vasudevan, the cells are divided into bins of fixed shape and size, the boundaries of the areas <u>do not stem from boundaries of outgoing handovers that are themselves derived from boundaries of entering handovers</u>. That is, in Vasudevan, the boundaries are geometrically homogenous (bins and sectors) and the boundaries <u>are not data-driven</u>.

For at least these exemplary reasons, independent claim 1 is patentably distinguishable from Vasudevan. Claims 3-6 and 8 are patentable at least by virtue of their dependency on claim 1.

In addition, claim 4 recites: "wherein said dividing comprises: acquiring incoming handover boundaries from best server maps provided by a management system, and computing outgoing handover boundaries from said incoming handover boundaries, dividing each cell of

said cellular network into a set of areas using the outgoing handover boundaries, wherein said

outgoing handover boundaries form the boundaries of said areas."

As explained above, Vasudevan does not disclose or suggest dividing a cell into bins and

sectors based on the outgoing handover boundaries. Furthermore, the Examiner alleges that the

remaining features of claim 4 are inherent (*see* pages 5 and 6 of the Office Action). Applicant

respectfully disagrees.

Under the doctrine of "inherency," if an element is not expressly disclosed in a prior art

reference, the reference will still be deemed to anticipate a subsequent claim if the missing

element "is necessarily present in the thing described in the reference" *Cont'l Can Co. v.*

Monsanto Co., 948 F.2d 1264, 1268, 20 U.S.P.Q.2d 1746, 1749 (Fed. Cir. 1991). "Inherent

anticipation requires that the missing descriptive material is '**necessarily present**,' **not merely**

probably or possibly present, in the prior art." (emphasis added) *Trintec Indus., Inc. v. Top-*

U.S.A. Corp., 295 F.3d 1292, 1295, 63 U.S.P.Q.2d 1597, 1599 (Fed. Cir. 2002); see also MPEP

§2112.

The Examiner has failed to provide any evidence that would suggest that the outgoing

handover boundaries must be determined from incoming handover boundaries. In fact,

Applicant respectfully submits that the outgoing handover boundaries may be stored in the

system as opposed to being determined from the incoming handover boundaries. In short, the

deficiencies of the Vasudevan reference fall to the Examiner's burden to show inherent inclusion

of the claimed elements. For at least these additional exemplary reasons, claim 4 is patentably

distinguishable from Vasudevan.

Next, independent claims 7 and 10 recite features similar to, although not necessarily

coextensive with, the features argued above with respect to claim 1. Therefore, arguments

presented with respect to claim 1 are respectfully submitted to apply with equal force here. For

at least substantially analogous exemplary reasons, therefore, independent claims 7 and 10 are

patentably distinguishable from Vasudevan. Claim 9 is patentable at least by virtue of its

dependency on claim 7.

VI.   Conclusion

In view of the above, reconsideration and allowance of this application are now believed

to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is

kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

Respectfully submitted,

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